

## **REMARKS**

The subject application has been reviewed in light of the non-final Office Action dated September 28, 2009.

Claims 1-16, 18-21, 23, 24, 35-37, 39-42, 44 and 45, as presented in Applicants' communication dated January 15, 2009 (which was subsequently entered by Applicants' Request for Continued Examination under 37 C.F.R. §1.114, dated April 15, 2009), are pending in the subject application, with claims 1, 6, 7, 12, 13, 18, 35 and 39 being in independent form. Claims 17, 22, 25-34, 38 and 43 were previously cancelled without disclaimer or prejudice to Applicants' right to pursue the subject matter of these claims in the future.

By this Amendment, the specification has been amended to correct minor typographical errors and independent claim 7 has been amended to be consistent with dependent claims 8-11.

Applicants respectfully submit that no new matter has been introduced by this Amendment. Entry of this Amendment is respectfully requested.

### **Rejection of Claims 7-11 under 35 U.S.C. §112, Second Paragraph**

In the September 28, 2009 Office Action, the Examiner rejected claims 7-11 under 35 U.S.C. §112, second paragraph, as allegedly indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention.

Specifically, the Examiner stated that the term "The robot" recited in each of claims 8-11 lack antecedent basis and suggested that the preamble of independent claim 7 be amended to replace the term "Apparatus" with "A robot".

By this Amendment, independent claim 7 has been amended as suggested by the Examiner.

Applicants respectfully submit that claims 7-11, as presently amended, satisfy the requirements of 35 U.S.C. §112, second paragraph.

Withdrawal of the Examiner's rejection of claims 7-11 under 35 U.S.C. §112, second paragraph, is respectfully requested.

Rejection of Claims 1-16, 18-21, 23, 24, 35-37, 39-42, 44 and 45 under 35 U.S.C. §103(a) –  
Green, Webster, Jr., and Vesely

In the September 28, 2009 Office Action, the Examiner rejected claims 1-16, 18-21, 23, 24, 35-37, 39-42, 44 and 45 under 35 U.S.C. §103(a) as being allegedly unpatentable over U.S. Patent No. 5,808,665 to Green (hereinafter "Green") in view of U.S. Patent No. 6,123,669 to Webster, Jr. (hereinafter "Webster, Jr."), and U.S. Patent No. 6,246,898 to Vesely et al. (hereinafter "Vesely").

In response, Applicants respectfully traverse the Examiner's rejection of claims 1-16, 18-21, 23, 24, 35-37, 39-42, 44 and 45 for at least the following reasons.

Independent claim 1 recites:

A robot for use with a steerable catheter that includes a thumb control adapted to control a deflection of a distal tip of the catheter and a position sensor, fixed in a vicinity of the distal tip of the catheter, and adapted to generate a position signal, the robot comprising:  
an end-effector, adapted to be coupled to the thumb control; and  
a controller, adapted to receive the position signal, the position signal being indicative of six dimensions of location and orientation information, the controller being adapted to drive the end-effector to position the distal tip of the catheter at a desired position based on the six dimensions of location and orientation information by manipulating the thumb control.

On page 3 of the September 28, 2009 Office Action, the Examiner cited Green as allegedly disclosing the “end-effector” feature set forth in independent claim 1. Specifically, the Examiner alleged that end effector 170 and end effectors 270R, 270L in Green disclose the “end-effector” feature set forth in independent claim 1.

Green, as presently understood by Applicants, describes a teleoperator system. The Abstract section of Green describes an end effector as “a modified surgical instrument such as retractors, electrosurgical cutters, electrosurgical coagulators, forceps, needle holders, scissors, blades and irrigators.” Column 9, lines 10-13, of Green describes end effector 170 as comprising a pair of movable jaws. Figure 14 of Green shows end effectors 270R, 270L as pairs of movable jaws.

Green does not disclose or suggest an end-effector that is “adapted to be coupled to the thumb control” of a steerable catheter, the thumb control being “adapted to control a deflection of a distal tip of the catheter”, as set forth in independent claim 1, but instead describes a modified surgical instrument such as a pair of movable jaws.

Webster, Jr., as presently understood by Applicants, describes omni-directional steerable catheters. Vesely, as presently understood by Applicants, describes a method for carrying out a medical procedure using a 3-D tracking and imaging system. However, neither Webster, Jr. nor Vesely disclose or suggest the above-identified deficiencies of Green.

Accordingly, Applicants respectfully submit that Green, Webster, Jr., and Vesely, taken individually or in combination, fail to teach or suggest each and every feature of the robot specified in independent claim 1. Independent claim 1 is therefore patentable over Green, Webster, Jr., and Vesely. Independent claims 6, 7 and 12 are patentable over Green, Webster, Jr., and Vesely for at least similar reasons.

Claims 2-5 and 8-11 depend from and include all of the limitations of independent claims 1 and 7, respectively. Accordingly, claims 2-5 and 8-11 are patentable over Green, Webster, Jr. and Vesely for at least the reasons set forth above with respect to independent claims 1 and 7.

Independent claim 13 recites an apparatus comprising, *inter alia*, a control unit adapted to, *inter alia*, “rotate the proximal end of the catheter in order to cause the distal tip of the catheter to roll to a rotation the deflection curve of which includes the target, the rotation determined responsive to the position signal, and deflect the distal tip of the catheter along the deflection curve to the target.” Independent claim 35 recites similar features.

Independent claim 18 recites an apparatus comprising, *inter alia*, a control unit adapted to, *inter alia*, “responsive to the six dimensions of location and orientation information of the position signal, determine a roll of the distal tip of the catheter, and responsive to a determination that the roll lags the rotation, drive the robot to move a portion of the proximal end of the catheter.” Independent claim 39 recites similar features.

Applicants respectfully point out that MPEP 2141 instructs that in determining obviousness under 35 U.S.C. §103(a), the Examiner must ascertain the differences between the claimed invention and the prior art. Applicants further point out that MPEP 2141.02 instructs that ascertaining the differences between the prior art and the claims at issue requires interpreting the claim language, and considering both the invention and the prior art references **as a whole**. The same section of the MPEP, citing *W.L. Gore & Associates, Inc., v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), further instructs that the requirement of analyzing the claimed subject matter as a whole requires **consideration of the express limitations** set forth in

the claim. In contrast, distilling an invention down to the “gist” or “thrust” of the invention disregards the requirement of analyzing the subject matter “as a whole.”

Applicants further respectfully point out that MPEP 706.02(j) instructs the Examiner of the importance of explaining in the written records the rationale for decisions made during prosecution of the application.

The written record found in the September 28, 2009 Office Action evidences a failure by the Examiner to consider the above-identified limitations set forth in independent claims 13, 18, 35 and 39 in reaching a conclusion that independent claims 13, 18, 35 and 39 were obvious in view of Green, Webster, Jr., and Vesely, and unpatentable under 35 U.S.C. §103(a).

Should the Examiner disagree therewith, Applicants respectfully request that the Examiner specify where in the law, rules, MPEP or September 28, 2009 Office Action there is a basis for such disagreement.

Based on the above, Applicants respectfully submit that the Examiner has failed to establish independent claims 13, 18, 35 and 39 as *prima facie* obvious over Green, Webster, Jr., and Vesely. Accordingly, Applicants maintain that independent claims 13, 18, 35 and 39 are patentable over Green, Webster, Jr., and Vesely.

Claims 14-16, 19-21, 23, 24, 36, 37, 40-42, 44 and 45 depend from and include all of the limitations of independent claims 13, 18, 35 and 39, respectively. Accordingly, claims 14-16, 19-21, 23, 24, 36, 37, 40-42, 44 and 45 are patentable over Green, Webster, Jr., and Vesely for at least the reasons set forth above with respect to independent claims 13, 18, 35 and 39.

Withdrawal of the Examiner’s rejection of claims 1-16, 18-21, 23, 24, 35-37, 39-42, 44 and 45 under 35 U.S.C. §103(a) as being allegedly unpatentable over Green, Webster, Jr., and Vesely is respectfully requested.

Rejection of Claims 1-16, 18-21, 23, 24, 35-37, 39-42, 44 and 45 under 35 U.S.C. §103(a) –

Plicchi, Funda, and Stevens-Wright

In the September 28, 2009 Office Action, the Examiner rejected claims 1-16, 18-21, 23, 24, 35-37, 39-42, 44 and 45 as being allegedly unpatentable over U.S. Patent Application Publication No. 2004/0254566 to Plicchi et al. (hereinafter “Plicchi”) in view of U.S. Patent No. 5,417,210 to Funda et al. (hereinafter “Funda”), and U.S. Patent No. 5,383,852 to Stevens-Wright (hereinafter “Stevens-Wright”).

In response, Applicants respectfully traverse the Examiner’s rejection of claims 1-16, 18-21, 23, 24, 35-37, 39-42, 44 and 45 for at least the following reason.

Plicchi was published on December 16, 2004 from U.S. Patent Application No. 10/767,197, filed January 30, 2004. In comparison, the effective filing date of the subject application is February 23, 2004. Since the February 23, 2004 effective filing date of the subject application is earlier than the December 16, 2004 publication date of Plicchi, it is Applicants’ understanding that Plicchi was applied as a prior art reference under subsection (e) of 35 U.S.C. §102 as of the January 30, 2004 filing date of U.S. Patent Application No. 10/767,197.

With respect to Plicchi, Applicants enclose herewith a Declaration Under 37 C.F.R. §1.131 (hereinafter “Declaration”) to establish completion of invention (by way of actual reduction to practice) of the subject matter of rejected claims 1-16, 18-21, 23, 24, 35-37, 39-42, 44 and 45 prior to the January 30, 2004 effective date of Plicchi.

Annexed to the Declaration is Exhibit A, consisting of one video clip entitled “Robotic\_Steering,” recorded on one CD, to show actual reduction to practice of the claimed subject matter of rejected claims 1-16, 18-21, 23, 24, 35-37, 39-42, 44 and 45 in a WTO member

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country prior to the January 30, 2004 effective date of Plicchi. Also annexed to the Declaration is Exhibit B, consisting of screen prints obtained from the video clip provided in Exhibit A.

Applicants note that the Declaration is being submitted with a Petition under 37 C.F.R. §1.91 and includes (a) an authorization to charge the \$130.00 petition fee under 37 C.F.R. §1.17(h) and (b) a statement explaining why entry of Exhibits A and B in the file record is necessary to demonstrate patentability, as required by 37 C.F.R. §1.91. Specifically, the Petition under 37 C.F.R. §1.91 states that entry of Exhibits A and B in the file record is necessary to demonstrate patentability because Exhibits A and B provide support for the Declaration.

Based on the above, Applicants respectfully submit that Plicchi is disqualified as a prior art reference. Accordingly, the Examiner's rejection of claims 1-16, 18-21, 23, 24, 35-37, 39-42, 44 and 45 under 35 U.S.C. §103(a) as being allegedly unpatentable over Plicchi, Funda, and Stevens-Wright is rendered moot.

Withdrawal of the Examiner's rejection of claims 1-16, 18-21, 23, 24, 35-37, 39-42, 44 and 45 under 35 U.S.C. §103(a) is respectfully requested.



Conclusion

In view of the above, Applicants respectfully submit that the subject application is in condition for allowance. Accordingly, Applicants respectfully request that the subject application be allowed and a Notice of Allowance issued. If the Examiner believes that a telephone conference with Applicants' attorneys would be advantageous to the disposition of this case, the Examiner is requested to telephone the undersigned.

Respectfully submitted,

Paul J. Esatto, Jr.  
Registration No.: 30,749

Scully, Scott, Murphy & Presser, P.C.  
400 Garden City Plaza, Suite 300  
Garden City, New York 11530  
(516) 742-4343

KRV/WC:vh

Encs. Declaration Under 37 C.F.R. §1.131 (with Exhibits A and B)  
Petition Under 37 C.F.R. §1.91